It will be seen, then, that chronic lung disease following influenza is not so uncommon and that it is easy to say "tuberculosis," but it is a very hard thing to prove.

I wish to express my thanks to Dr. Jaches, to Dr. Wessler and to Dr. Lund, roentgenologists to the Mount Sinai Hospital, for their kindness and coöperation in the roentgen-ray department; and to Dr. Friedman and to Dr. Weiss, my colleagues in the clinic, for referring their cases to me.

PNEUMONIA AT A BASE HOSPITAL, 1918–19.

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This is an account of my personal observations of pneumonia at the Base Hospital, Fort Sam Houston, Texas, during the season 1918–19, of cases which were under my immediate control and treated and studied by me personally. A series of 137 cases were admitted to my ward without selection, picked up in the different influenza wards and diagnosed pneumonias; thus I think that they represent fairly well a picture of the type of pneumonia we had to deal with during the epidemic. Some of the cases were moribund when admitted, but most of them were diagnosed early, so that the study in the majority of cases began at the early stage of the pneumonic process. Much care was given to the working out of the bacteriology of each individual case as well as the clinical aspects of the disease. With the splendid coöperation of the laboratory and the adequate nursing facilities I was enabled to carry on this work to the end of the epidemic. I wish to express my hearty thanks to all those who took an enthusiastic part in this work. Miss King did the blood chemistry on cases studied.

In the study of the sputa and the throat swabs the request was always made out for the four types of organisms, viz.:

1. Pneumococcus type.
2. Streptococcus hemolyticus.
3. Influenza bacillus.
4. Micrococcus catarrhalis.

Thus the accompanying tables have "plus" for positive and "minus" for none present. Here, however, I must state that the special media for the cultivation of the Bacillus influenzæ as described by Avery, of the Rockefeller Institute for Medical Research in the *Jour. Am. Med. Assn.*, lxxi, 2050, was not used, which may answer for our very low percentage of the Bacillus influenzæ found.

Bacteriological Varieties Present. The diagram shows the incidence of the various types of pneumococci isolated from the sputum. The sum total of these various types represents 43.8 per cent. It is difficult to say whether or not a pneumococcus found in sputum represents lobar pneumonia. There were some cases which were lacking a frank lobar consolidation in which we did isolate pneumococci from the sputum. Should these be classed as lobar pneumonias? This has always been a question in my mind, the exact status of what constitutes a lobar pneumonia, whether a frank consolidation with pneumococci found in sputum or even a partial consolidation or patchy consolidation with a pneumococcus recovered from the sputum or the blood stream.

Pneumonias here described followed influenza. Just what percentage of them I am unable to say. The diagnosis of influenza in some of these cases I have questioned; thus I hardly think it would be accurate to try to give the percentage of cases that followed influenza. Let us say that the majority had influenza preceding pneumonia.

The bronchopneumonias with the etiological factor of Streptococcus hemolyticus made up 36.7 per cent. Some of these cases later in the disease went into massive consolidation, described by McCallum and Cole last year, with pleural effusions and a very high mortality, which in these cases was 83.3 per cent. It is of interest to note that of the 30 cases from which Streptococcus hemolyticus was isolated from the sputum it was found in the blood stream 13 times and it was not found 17 times. Of the positive blood cultures here 92.3 per cent. died, whereas only 57.64 per cent. died with the negative blood cultures.

The influenza bacillus recovered from the sputum composed only 2.4 per cent. The low percentage of the influenza bacilli found may be due to several causes:

1. The cases were not early influenza, only coming into this group after pneumonia developed.

2. Cultures were made on ordinary blood agar, the special media described by Avery, of the Rockefeller Institute, not having at this time been in use.

3. No special effort was made by repeated examinations to find Bacillus influenzæ.

Micrococcus catarrhalis represents 17.1 per cent. There were no deaths in this series.

The clinical picture of both the lobar and the bronchopneumonias has been described too many times by the different observers, and I shall not add to the numerous repetitions, for our cases did not differ in this aspect from those at other places. I have already described these sufficiently in another paper.

The bacteriology of throat cultures represents one important

point, *i. e.*, that Streptococcus hemolyticus is present in a large number of the cases, 42 per cent. This undoubtedly is a potent factor in the subsequent production of the hemolytic streptococcus pneumonias and its incidental high death-rate. Streptococcus hemolyticus found in the throat and subsequently in the sputum was present in 13 cases.

Streptococcus hemolyticus found in the throat and not isolated from the sputum occurred in 9 cases.

Streptococcus hemolyticus found in the throat and not found in the sputum, but again recovered from the blood stream, occurred in 1 case.

OCCURRENCE OF VARIOUS TYPES OF ORGANISMS IN SPUTUM.

Type of organism.	Incidence.	
	Number.	Per cent.
Pneumococcus, Type I	2	2.4
Pneumococcus, Type II	1	1.2
Pneumococcus, Type IIa	5	6.0
Pneumococcus, Type III	2	2.4
Pneumococcus, Type IV	26	31.8
Streptococcus hemolyticus	30	36.7
Influenza bacillus	2	2.4
Micrococcus catarrhalis	14	17.1
Total	82	100.0

OCCURRENCE OF VARIOUS TYPES OF ORGANISMS IN THE THROAT.

Type of organism.	Incidence.	
	Number.	Per cent.
Pneumococcus	0	
Streptococcus hemolyticus	21	42
Influenza bacillus	2	4
Micrococcus catarrhalis	27	54
Total	50	100

Relation of Types of Organisms in Sputum to Mortality. The death-rate in this series was 27.73 per cent. against 18.19 per cent. in the 819 cases reported in the previous paper, which represents all the pneumonia cases here last winter. One factor here is of importance, and that is that this series deals with 36.5 per cent. of Streptococcus hemolyticus against 25.1 per cent. in the other series. Furthermore, some cases were sent up when they were already moribund which in itself would raise the percentage considerably in a small series of cases.

In the incidence of various organisms in the sputa to the mortality, pneumococcus type III takes the lead together with Streptococcus viridans, both representing a mortality of 100 per cent. Strep-

tococcus hemolyticus comes next with a mortality of 83.3 per cent., pneumococcus type IIa with a 40 per cent. mortality and pneumo-

FIG. 1.—Occurrence of various types of organisms in sputum.

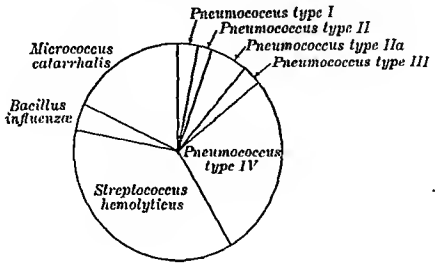


FIG. 2.—Occurrence of various types of organisms in throat.

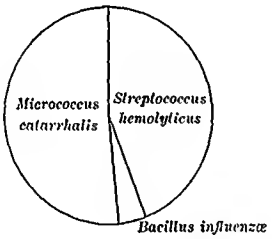
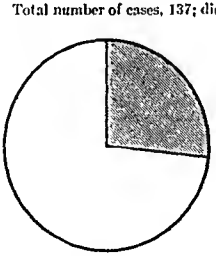
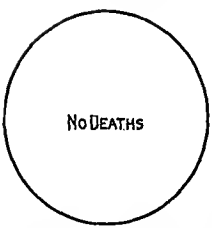


FIG. 3.—Total death-rate. Total number of cases, 137; died, 38; percentage, 27.73.

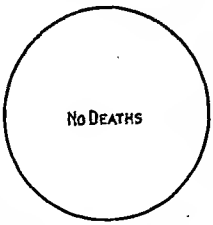


coccus type IV with 7.6 per cent. There was no mortality in the pneumococcus type I and II infections and also in the Bacillus influenzæ and Micrococcus catarrhalis.

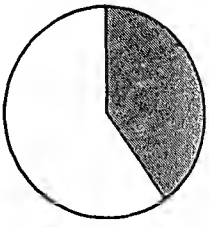
FIG. 4.—Death-rate from various organisms recovered from sputum.



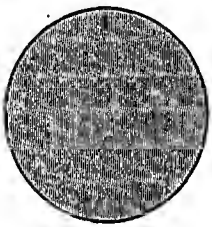
Pneumococcus, Type I: Total number of cases, 2; deaths, 0.



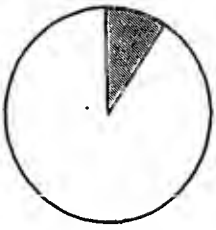
Pneumococcus, Type II: Total number of cases, 1; deaths, 0.



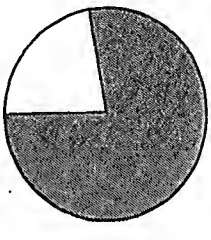
Pneumococcus, Type IIa: Total number of cases, 5; deaths, 2; percentage, 40.



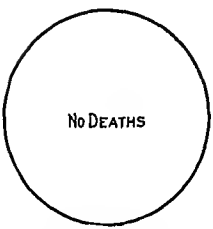
Pneumococcus, Type III: Total number of cases, 2; deaths, 2; percentage, 100.



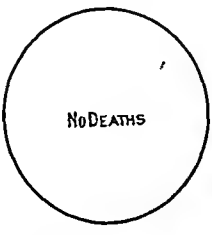
Pneumococcus, Type IV: Total number of cases, 20; deaths, 2; percentage, 7.6.



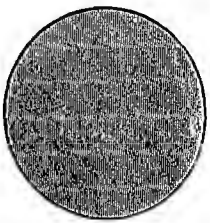
Streptococcus hemolyticus; Total number of cases, 30; deaths, 25; percentage, 83.3.



Bacillus influenzæ: Total number of cases, 2; deaths, 0.



Micrococcus catarrhalis: Total number of cases, 14; deaths, 0.



Streptococcus viridans: Total number of cases, 1; deaths, 1; percentage, 100.

The fact that Streptococcus hemolyticus is a very virulent infection is only emphasized in these tables.

INCIDENCE OF VARIOUS TYPES OF ORGANISMS IN SPUTUM AND RESULTING MORTALITY.

Type of organism.	Incidence. No.	Incidence. Per cent.	Mortality. No.	Mortality. Per cent.
Pneumococcus, Type I	2	2.4	0	0
Pneumococcus, Type II	1	1.2	0	0
Pneumococcus, Type IIa	5	6.0	2	40.0
Pneumococcus, Type III	2	2.4	2	100.0
Pneumococcus, Type IV	20	31.7	2	7.6
Streptococcus hemolyticus	30	30.5	25	83.3
Influenza bacillus	2	2.4	0	0
Micrococcus catarrhalis	14	17.0	0	0
Streptococcus viridans	..	..	1	100.0
Undetermined	..	..	0	

Relation of Blood Cultures to Pneumonia. The total number of blood cultures taken was 163. This represents, as can be seen in the diagram, repeated cultures on some patients while a few of the patients were omitted. However, the percentage recorded is on cases and not on individual cultures taken, thus representing a positive if one out of several cultures was positive and negative only where after repeated cultures all were negative.

One fact stands out in prominence here, and that is the very high mortality in cases in which a Streptococcus hemolyticus was recovered from the blood stream. Of these 92.3 per cent. died.

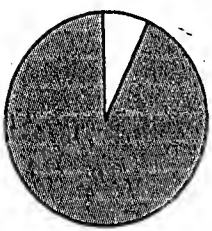
In fact this seemed about the only organism which we could recover from the blood stream with the exception of the pneumococcus type IV and 2 cases in which the laboratory was unable to identify the organism.

The percentage of deaths with negative blood cultures exceeds the percentage with positive blood cultures by 29.42 per cent.

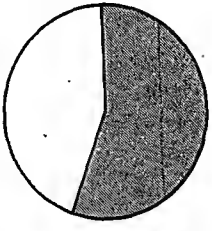
RELATION OF POSITIVE BLOOD CULTURES TO MORTALITY IN PNEUMONIA.

Type of organism in sputum.	No. of cases.	Blood cultures. Positive. No.	Positive. Per cent.	Negative. No.	Negative. Per cent.	Mortality. Cases with positive blood cult. No.	Positive. Per cent.	Cases with negative blood cult. No.	Negative. Per cent.
Streptococcus hemolyticus	30	13	43.30	17	56.70	12	92.30	10	57.64
Pneumococcus:									
Type IV	20	1	3.80	25	00.20	..	..	2	8.00
Type III	2	..	..	2					
Type IIa	5	..	..	5	..	..	..	2	40.00
Type II	1	..	..	1					
Type I.	2	..	..	2					
Influenza bacillus	2	..	..	2	..	..	..	1	50.00
Micrococcus catarrhalis	14	..	..	14	..	..	..	1	7.14
No organism identified	55	2	7.60	53	92.40	..	..	0	5.06
Total	137	16	11.67	95	88.33	12	35.29	22	04.71

FIG. 5.—Blood culture death-rate. Streptococcus hemolyticus.

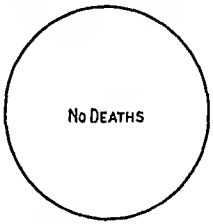


Total number of positive blood cultures, 13; died, 12; percentage, 92.3.

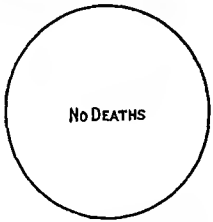


Total number of negative blood cultures, 17; died, 10; percentage, 57.64.

Pneumococcus, Type I.

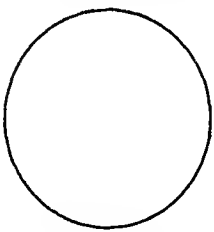


Total number of positive blood cultures, 0.

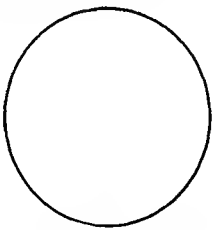


Total number of negative blood cultures, 2; died, 0.

FIG. 6.—Blood culture death-rate. Pneumococcus, Type II.

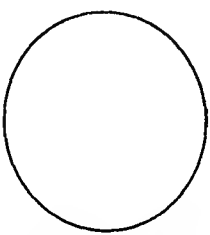


Total number of positive blood cultures, 0.

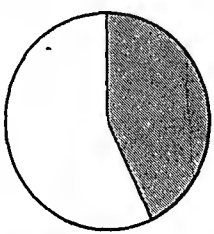


Total number of negative blood cultures, 1; died, 0.

Pneumococcus, Type IIa.

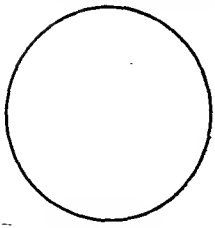


Total number of positive blood cultures, 0.

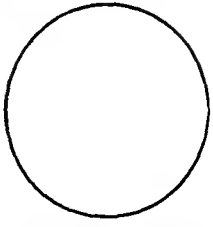


Total number of negative blood cultures, 5; died, 2; percentage, 40.

FIG. 7.—Blood-culture death-rate. Pneumococcus, Type III.

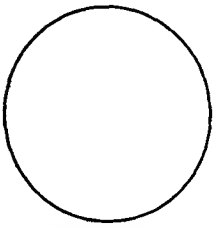


Total number of positive blood cultures, 0.

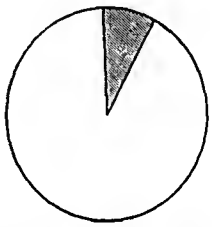


Total number of negative blood cultures, 2; died, 0.

Pneumococcus, Type IV.

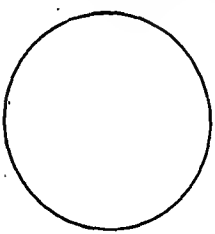


Total number of positive blood cultures, 1; died, 0.

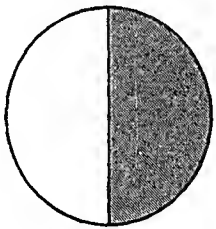


Total number of negative blood cultures, 25; died, 2; percentage, 8.

FIG. 8.—Blood-culture death-rate. Bacillus influenzæ.

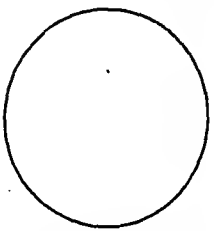


Total number of positive blood cultures, 0.

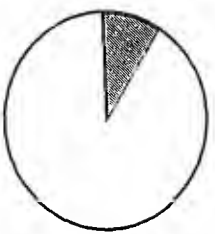


Total number of negative blood cultures, 2; died, 1; percentage, 50.

Micrococcus catarrhalis.

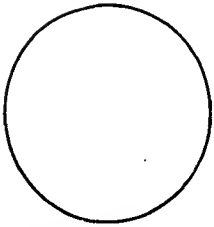


Total number of positive blood cultures, 0.

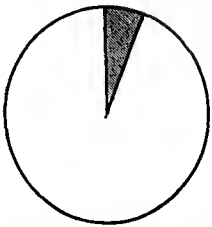


Total number of negative blood cultures, 14; died, 1; percentage, 7.14.

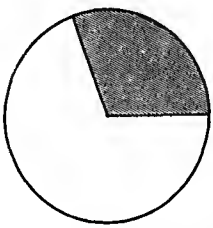
FIG. 0.—Blood culture death-rate.
Organism not identified.



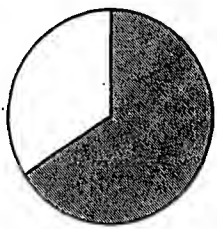
Total number of positive blood cultures, 2; died, 0.



Total number of negative blood cultures, 53; died, 6; percentage, 5.60.



Total number of cases with positive blood cultures: 35.29 per cent.



Total number of cases with negative blood cultures: 64.71 per cent.

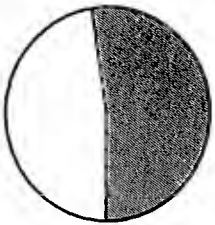
RELATION OF LEUKOCYTES TO MORTALITY. A glance at the diagrams tells the story which has been emphasized so many times during the present epidemic, *i. e.*, that leukocytosis is a very favorable factor in the prognosis of pneumonia.

In the leukocyte count under 10,000, 51.3 per cent. died. In 10,000 to 20,000 only 40.6 per cent. In 20,000 to 30,000 only 8.1 per cent. This needs no comment.

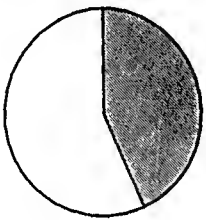
THE RELATION OF LEUKOCYTES TO MORTALITY IN PNEUMONIA.

Leukocytes.	Number of cases.	Mortality. Per cent.
Under 10,000	10	51.3
10,000 to 20,000	15	40.0
20,000 to 30,000	3	8.1
Total	37	100.0

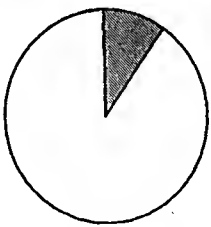
FIG. 10.—Relation of leukocytes to mortality.



Under 10,000: Total number of cases, 19; died, 51.3 per cent.



10,000 to 20,000: Total number of cases, 15; died, 40.0 per cent.



20,000 to 30,000: Total number of cases, 3; died, 8.1 per cent.

COMPLICATIONS. By far the greatest incidence of complications are the pleural effusions, making in this series a total of 78.57 per cent. of all the complications. The total incidence of complications is 30.65 per cent. These tabulated are as follows:

Pleural effusions	33
Tonsillitis	2
Prostatitis	1
Pericarditis	1
Sinusitis, frontal	1
Lung abscess	1
Suppurative perithyroiditis (Streptococcus hemolyticus)	1
Otitis media	2
Total	42

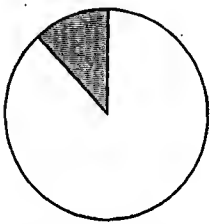
or 30.05 per cent.

VARIETIES OF ORGANISMS FOUND IN THE PLEURAL EFFUSIONS.

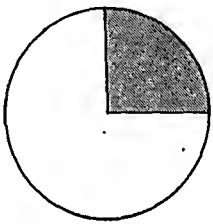
		Per cent.
Total number of effusions	33	
Sterile	6	18.10
Organisms found in	27	81.81
Of these there were:		
Streptococcus hemolyticus	10	70.39
Streptococcus viridans	1	3.70
Pneumococcus, Type IV	3	11.11
Pneumococcus, Type III	1	3.70
Organisms not identified	3	11.10

PREVIOUS HISTORY OF PNEUMONIA. Previous history of pneumonia was found in 16 cases, or 11.67 per cent. Of these there were 4 cases that died, a percentage of 25.0 per cent.

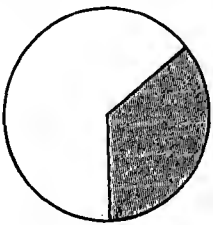
FIG. 11.



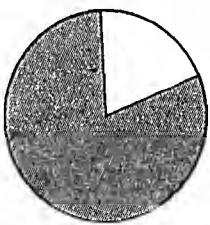
Previous history of pneumonia: Total number of cases, 137; previous history of pneumonia, 16; percentage, 11.67.



Death-rate in these cases: Total number of cases, 16; died, 4; percentage, 25.



Total of complications: Total number of cases, 137; cases with complications, 42; percentage, 30.65.

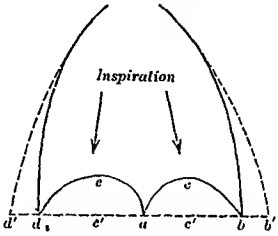


Total of effusions: Total number of cases with complications, 42; total, number of effusions, 33; percentage, 78.57.

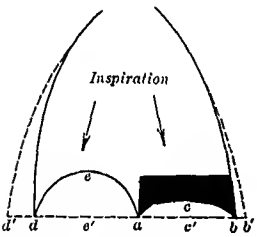
PLEURAL EFFUSIONS. In this series of 137 cases, pleural effusions were found in 33, or 24.08 per cent. Thus every fourth case was a case of effusion. This fact cannot be overemphasized.

Many of these cases of effusions have been aspirated a number of times. Our policy has been to do repeated aspirations as these were indicated, and when the empyemic process was walled off to resect the rib and drain the cavity.

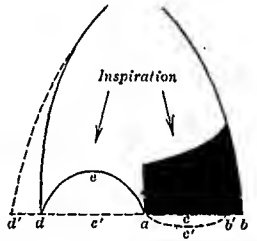
FIG. 12.—Hoover's sign.



Normal thorax. Notice the even flaring of the subcostal angles b-d on inspiration to b'-d' with the descent of the diaphragm from c-c to c'-e'.



Small amount of effusion. Notice the depressed diaphragm c on the side of effusion. With this the diminished excursion of the subcostal angle b to b' on inspiration while the other side has its normal excursion d to d'.



Large amount of effusion with depression of diaphragm to a straight line. Notice that on inspiration the subcostal angle b on the side of the effusion not only does not flare out but actually pulls in the distance between b and b'.

Such a high percentage of fluids goes to show that many effusions have accompanied the pneumonic process and that only a careful examination and an ever-present lookout for fluid will reveal this, as otherwise it will be passed by unnoticed.

What are the diagnostic points which are of aid to the physician in the diagnosis of fluids? I shall try to emphasize a few which may perhaps be of some help to others working in this field:

1. In the first place, taking a case with a typical pneumonia curve, after a crisis and the temperature staying normal for several

days, then suddenly beginning to rise in the evening of each day to 99.2, 99.6, etc., higher each day—look out for fluid.

2. With the dulness due to fluid the tactile fremitus is abolished unless the compression of the fluid is marked, in which case the fluid becomes a good conductor and will transmit the vibrations of the sound to the periphery. Experience and judgment alone count here.

3. Whispered voice sounds are well transmitted through fluid and have a characteristic quality which, once acquired, is easily recognized.

4. The last but not the least is the Hoover sign. This I tried to make clear in the accompanying diagram, exaggerating somewhat the true state of affairs for the sake of making my point clear. This to me has been many a time a very valuable diagnostic aid. You place your thumbs against the costal margins of the cartilages on the substernal angle, the palm of the hand grasping the side of the chest as though one were trying to circumvene the lower part of the thoracic cage, the thumbs resting down about the junction of the eighth or ninth cartilage. You simply judge the distance of excursion of both sides of the chest during the inspiration, noticing whether or not there is any lagging of either side as compared with the other side. The side with the effusion will lag, due to the factors described in the diagrams.

LUNG PUNCTURES.

		Per cent.
Antemortem.		
1. Sterile	8	40
2. Organisms	12	60
Of these:		
(*a*) Streptococcus hemolyticus	9	45
(*b*) Streptococcus viridans	1	5
(*c*) Staphylococcus aureus	1	5
(*d*) Organisms not identified	1	5
(*e*) Sterile	8	40
Total	20	
Postmortem.		
1. Sterile	2	40
2. Organisms	3	60
Of these:		
(*a*) Pneumococcus, Type III	1	20
(*b*) Streptococcus hemolyticus	2	40
(*c*) Sterile	2	40
Total	5	

HEART PUNCTURES.

Postmortem.		
1. Sterile	3	42.85
2. Organisms	4	57.15
Of these:		
(*a*) Streptococcus hemolyticus	3	75
(*b*) Pneumococcus, Type IV	1	25

FIG. 13

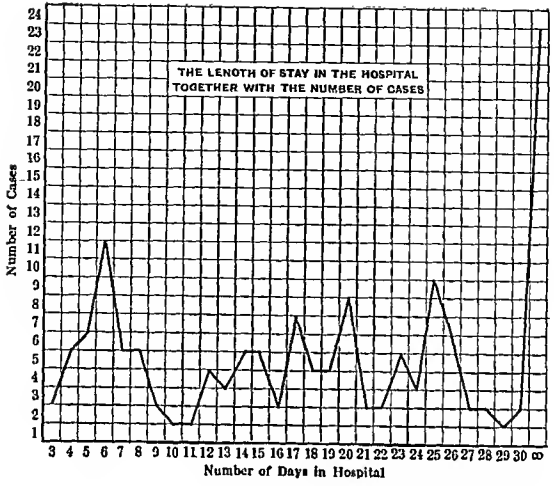
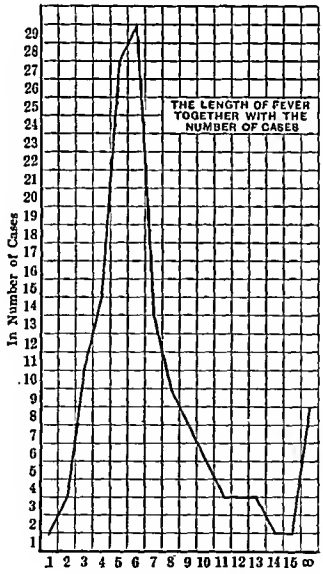

THE LENOTH OF STAY IN THE HOSPITAL
TOGETHER WITH THE NUMBER OF CASES
Number of Cases
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 ∞
Number of Days in Hospital

FIG. 14


THE LENGTH OF FEVER
TOGETHER WITH THE
NUMBER OF CASES
In Number of Cases
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 ∞
Fever, Number of Days

BLOOD CHEMISTRY IN PNEUMONIA

Name.	Date.	Per cent. of sugar.		Creatinine, mgm.	Uric acid, mgm.	Urea nitrogen, mgm.	Chlorides, per cent.	pH before glucose.	pH after glucose.	RpH before glucose.	RpH after glucose.
		Before glucose.	After glucose.								
McK.	Nov. 27	0.130	0.190	0.45	2.25	7.25	1.20				
R.	Nov. 28	0.140	0.209	0.75	2.95	11.50	0.40				
	Nov. 29	0.110	0.220	0.00	3.35	13.50	0.54				
M.	Nov. 29	0.104	..	0.75		17.75	0.50				
P.	Nov. 30	..	0.232	1.05	3.65	21.75	0.34				
M.	Nov. 20	0.090	0.750	..	3.65	22.75	0.50				
	Nov. 30	0.076	0.240	0.60	4.00	21.25	0.51				
	Dec. 1	0.110	0.194	0.45	1.28	20.00	0.40				
K.	Nov. 30	0.092	..	0.75	3.55	18.00	0.55				
S.	Dec. 2	0.008	0.100	0.70	3.65	10.25	0.47				
W.	Dec. 3	0.100	..	0.45	4.40	18.00	0.51				
	Dec. 4	0.108	0.252	0.45	..	16.75	0.57				
P.	Dec. 3	0.180	0.248	0.55	5.40	..	0.60				
P.	Dec. 3	0.070	0.400	0.40	4.70	10.50	0.50				
	Dec. 4	0.100	0.200	0.55	3.45	..	0.50				
A.	Dec. 5	0.160	0.232								
H.	Dec. 7	0.070	0.209	0.17							
R.	Dec. 10	0.100	0.204	1.10	..	16.75					
	Dec. 11	0.160	0.250	0.60	..	14.75	0.43	6.9			
	Dec. 12	0.180	0.204	..	..	16.75	0.43	7.0			
	Dec. 13	0.114	0.268	0.75	..	27.50	0.53	7.5	7.5		
B.	Dec. 0	..	0.204	0.60							
	Dec. 10	0.110	..	0.55	..	22.75	0.43				
	Dec. 11	0.104	0.264	0.45	..	13.00	..	..	7.4		
	Dec. 12	0.180	0.204	..	..	10.75	0.35	7.1	7.1		
T.	Dec. 0	0.128	0.228	1.00							
B.	Dec. 12	..	..	..	..	14.00	0.45	7.5			
McG.	Dec. 4	0.120	0.328	0.75	..	10.50	0.41	7.0	7.0		
	Dec. 16	0.100	0.216	0.00	..	..	0.50	7.4	7.4	7.5	7.5
K.	Dec. 22	..	0.132	..	..	..	..	..	7.4	..	7.0
R.	Dec. 23	..	..	..	..	..	..	7.4	..	7.4	
	Dec. 24	..	..	..	..	..	..	7.2	..	7.6	
W.	Dec. 31	..	..	..	..	..	..	7.5	7.5	8.5	8.5
	Jan. 1	..	..	..	..	..	..	7.4	7.2	8.0	7.8
G.	Jan. 1	..	..	..	..	..	..	7.0	7.5	7.8	7.3
	Jan. 2	..	..	..	..	..	..	..	7.5	..	7.8
R.	Jan. 10	..	..	..	..	..	..	7.5	7.3	8.4	8.2

CONCLUSIONS. 1. The incidence of Streptococcus hemolyticus in the throat has been high, viz., 42 per cent. Would prevention of this organism in the throat prevent the subsequent development of pneumonia?

2. More cases died with a negative blood culture than with a positive one. Here Streptococcus hemolyticus was the most frequently found organism in the blood stream.

3. Leukocytosis is undoubtedly a favorable factor in the prognosis.

4. History of a previous attack of pneumonia was found in 11.67 per cent. of the cases, of which 25 per cent. died.

5. Complications in this series of cases of pneumonia were present in 21.89 per cent.

6. Pleural effusions were found in 24.08 per cent. of the cases.

A FURTHER STUDY OF THE RELATION OF HOUSING TO PULMONARY TUBERCULOSIS. REPORT ON 18,891 CASES.[1]

By Frank F. D. Reckord, M.D.,
HARRISBURG, PA.

In November, 1918, the author reported a study of the "Relation of Housing to Pulmonary Tuberculosis, with a Report on 36,062 Cases.[2]" The subject is of great importance at this time, and there has been little written upon it in this country. As the author has had numbers of requests to continue his researches, it has been deemed advisable to publish the results in another series of 18,891 cases. In the first report it was emphasized that, if the houses of the poor are improved, the morals to an important extent will be improved, and in so doing the health and the relative efficiency will be benefited.

We must profit by the example of other nations and be inspired to make possible the pursuit of happiness for our huge army of struggling toilers. We must recognize the need as an economic rather than a philanthropic one; we must appreciate the ineffectiveness of our elaborate school systems in making good citizens when the influence of the home is opposed to it; we must recognize the evils incident to bad housing. We must also keep sound and strong the large foreign element which is being constantly woven into our social fabric. Their foreign ideals must be raised to American standards of citizenship, and that cannot be done under the present housing conditions of the poor and dependent, which obtain now in most districts to which they are generally drawn.

So long as there is no specific cure for tuberculosis we have no means of combating the disease except by adjusting environment, increasing the power of resistance and producing conditions favorable to the prevention and cure of the disease. There can be no doubt that fresh air, proper feeding, cleanliness of person and surroundings, rest, tranquillity of mind, careful regulation of the habits of the patient and regulated exercise are the factors on which a cure is based. They may therefore be considered as remedies. So long as there is poverty, with all its accompaniments, bad housing, insufficient nourishment, unsanitary conditions of industry, ignorance and many other evils undermining the welfare of society there will be tuberculosis, with the usual results of suffering, deterioration and premature death. The hope for better days lies not only in the prevention of the disease but in the eradication of the causes and the existing conditions that influence the spread of tuberculosis.

[1] Received for publication February 0, 1920. Read before the Harrisburg Academy of Medicine, February 27, 1920.

[2] Reckord, Frank F. D.; Am. Jour. Med. Sc., November, 1918, No. 5, clvi, 670.